

ADAPTIVE MANAGEMENT PROGRAM

Using Science to Manage River Resources in Grand Canyon



Colorado River Storage Project

With the authorization of the Colorado River Storage Project Act over 50 years ago on April 11, 1956, one of many key pieces of the overall Colorado River management structure outlined by Law of the River was put into place. The Colorado River Storage Project (CRSP) authorized by the Act, allowed for comprehensive development of the water resources of the Upper Basin states by providing for, among other things, the long-term regulatory storage of water to meet the entitlements of the Lower Basin. As the population in the West has continued to grow, so has the demand for water and power. The full value and necessity of the CRSP has repeatedly been demonstrated as these needs have been met. The important purposes and benefits provided by the CRSP cannot be overstated, particularly in light of the extended periods of drought that have been weathered successfully. One of the most complex and extensive river resource developments in the world, the CRSP will continue to play an important role in water management in the Upper Basin.

There are four main units built as part of the CRSP: The Wayne N. Aspinall Unit in Colorado (Blue Mesa, Crystal, and Morrow Point Dams), Flaming Gorge Unit in Utah, Navajo Unit in New Mexico, and Glen Canyon Unit in Arizona; and a number participating projects. The key benefits of the CRSP identified in the act include:

- Regulating the flow of the Colorado River
- Providing for reclamation of arid and semi-arid lands
- Generating hydropower
- Storing water for beneficial consumptive use
- Providing flood control and recreation

Key Features of the Colorado River Storage Project

The six dams of the CRSP main storage units have a combined live storage capacity of 30.6 million acre-feet and power generation capabilities to provide over four billion kilowatt-hours of energy annually.

Glen Canyon Dam and Lake Powell are the primary long-term carryover storage features of the CRSP. By itself, Lake Powell provides more storage capacity than all other storage features of the project combined. Total capacity for Lake Powell - when entirely full - is 26.2 million acre-feet, and the live capacity is 24.3 million acre-feet. At normal water surface elevation, the reservoir has a length of 186 miles and a surface area of 161,390 acres.

Overall, the Colorado River system - unique in terms of its storage capacity - can store more than 60 million acre-feet of water in Colorado River reservoirs, equivalent to four years of average annual runoff in the basin. This storage provides irrigation supplies for about 2 million acres of land while serving more than 23 million people.

Law of the River

The Colorado River is managed and operated under numerous compacts, federal laws, court decisions and decrees, contracts, and regulatory guidelines collectively known as the "Law of the River." This collection of documents apportions the water and regulates the use and management of the Colorado River among the seven basin states and Mexico. The following is a synopsis of some of the most significant acts or laws regulating the river.

The Colorado River Compact of 1922 - The cornerstone of the "Law of the River", this Compact was negotiated by the seven Colorado River Basin states and the federal government in 1922. It defined the relationship between the Upper Basin states, where most of the river's water supply originates, and the Lower Basin states, where most of the water demands were developing. At the time, the upper basin states were concerned that plans for Hoover Dam and other water development projects in the Lower Basin would, under the Western water law doctrine of prior appropriation, deprive them of their ability to use the river's flows in the future.

The states could not agree on how the waters of the Colorado River Basin should be allocated among them, so the Secretary of Commerce Herbert Hoover suggested the basin be divided into an upper and lower half, with each basin having the right to develop and use 7.5 million acre-feet (maf) of river water annually. This approach reserved water for future upper basin development and allowed planning and development in the Lower Basin to proceed.

Colorado River Storage Project of 1956 - Provided a comprehensive Upper Basin-wide water resource development plan and authorized the construction of Glen Canyon, Flaming Gorge, Navajo and Curecanti dams for river regulation and power production, as well as several projects for irrigation and other uses.

The Colorado River Basin Project Act of 1968 - This Act authorized construction of a number of water development projects in both the upper and lower basins, including the Central Arizona Project (CAP). It also made the priority of the CAP water supply subordinate to California's apportionment in times of shortage, and directed the Secretary to prepare, in consultation with the Colorado River Basin states, long-range operating criteria for the Colorado River reservoir system.

Grand Canyon Protection Act of 1992 - The Grand Canyon Protection Act of 1992 directs the Secretary of the Interior to operate Glen Canyon Dam in such a manner as to protect, mitigate adverse impacts to, and improve the values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established. This includes natural and cultural resources and visitor uses.

The Secretary is also directed to establish and implement long-term monitoring programs and activities that will ensure that Glen Canyon Dam is operated in a manner consistent with the Law of the River. These programs will include necessary research and studies to determine the effect of management of the dam on the natural, recreational, and cultural downstream resources. These actions will also be undertaken in consultation with other Federal agencies, the Governors of the Basin States, Indian Tribes, and the general public, including representatives of academic and scientific communities, environmental organizations, the recreation industry, and contractors for the purchase of Federal power produced at Glen Canyon Dam. To do that, a federally chartered advisory committee, called the Adaptive Management Work Group, has been formed consistent with the Federal Advisory Committee Act. The committee began functioning in the fall of 1997.